

# Fluoxetine Impairs Insulin Secretion without Modifying Extracellular Serotonin Levels in MIN6 $\beta$ -cells

Cataldo, L. R.

Cortés, V. A.

Mizgier, M. L.

Aranda, E.

Mezzano, D.

Olmos, P.

Galgani, J. E.

Suazo, J.

Santos, J. L.

© J. A. Barth Verlag in Georg Thieme Verlag KG Stuttgart, New York. Introduction: Pancreatic  $\beta$ -cells synthesize and store Serotonin (5-Hydroxytryptamine, 5HT) which is co-released with insulin. It has been proposed that extracellular 5HT binds to specific cell surface receptors and modulate insulin secretion. On the other hand, Selective Serotonin Reuptake Inhibitor (SSRI) fluoxetine seems to reduce Glucose-Stimulated Insulin Secretion (GSIS). However, it is unknown whether this effect results from changes in extracellular 5HT concentration owed to the blockade of 5HT transporter (SERT) or from non-5HT dependent actions. The aims of this work were: 1) to quantify extracellular 5HT levels and GSIS in  $\beta$ -cell lines, 2) to determine whether extracellular 5HT levels and GSIS are changed by fluoxetine or 5-Hydroxytryptophan (5HTP, the immediate 5HT biosynthetic precursor), and 3) to quantify the expression of Slc6a4 gene (encoding SERT) in  $\beta$ -cell lines in relation to other genes involved in